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Title: Vegetation Cover Change in the Upper Kings River basin of the Sierra Nevada
Detected using Landsat Satellite Image Analysis

Abstract. The Sierra Nevada of California is a region where large wildfires have been suppressed for over a century. A detailed geographic record of recent changes in vegetation cover across the Sierra Nevada remains a gap that can be filled with satellite remote sensing data. Results from Landsat image analysis over the past 25 years in the Upper Kings River basin showed that consistent, significant increases in the normalized difference vegetation index (NDVI) have not extended above 2000 m elevation, where cold temperatures presumably limit the growing season. Moreover, mean increases in NDVI since 1986 at elevations below 2000 m (which cover about half of the total basin area) have not exceeded 9%, even in the most extreme precipitation yearly comparisons. NDVI has decreased significantly at elevations above 2000 m throughout the basin in relatively wet year comparisons since the mid-1980s. These findings conflict with any assumptions that ET fluxes and river flows downstream could have been markedly altered by vegetation change over most of the Upper Kings River basin in recent decades.